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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,840	02/13/2002	Ken Anderson	495812001400	9040

7590 12/29/2004
Robert E. Scheid
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San Francisco, CA 94105-2482

EXAMINER

JUBA JR, JOHN

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

2/2

Office Action Summary	Application No. 10/075,840	Applicant(s) ANDERSON, KEN	
	Examiner John Juba, Jr.	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 36-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14 and 50-61 is/are allowed.
- 6) ☒ Claim(s) 1,5,6,37,38,46 and 49 is/are rejected.
- 7) ☒ Claim(s) 2-4, 7, 36, 39-45, 47, 48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 18, 2004 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 5, 6, 37, 38, 46, and 49 are rejected under 35 U.S.C. 102(a) as being anticipated by FUJI XEROX (JP 2000-268380 A). Referring *primarily* to Figure 3 and the associated text of the attached machine translation, disclose a hologram recording apparatus comprising polarizing beam splitter in the output arm of the object beam and a detector. The basic operation is described in paragraph [0019]. A first image, containing an alignment pattern is recorded using a P-polarized alignment (object) beam and a P-polarized reference beam that interfere to form an amplitude-type

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hologram containing an alignment image. A second hologram is multiplexed in the same region using a P-polarized data (object) and an S-polarized reference beam that interfere to form a polarization-modulating hologram containing data. Due to the presence of the first, alignment hologram, the output arm of the data beam contains (in addition to 0-order P-polarized data) S-polarized light diffracted by the alignment hologram (see paras. [0044] – [0047]). During the second write operation, the S-polarized alignment pattern may be regarded as an “offset” component of the output arm of the data beam used to record the second hologram. Since FUJI XEROX disclose a control circuit responsive to the detected alignment pattern to position the optical head, the detector (53s) must be regarded as being “for” (capable of) measuring the offset component.

Turning to the discussion in paragraph [0047] of the reference (for example), FUJI XEROX clarify that, during recording of the second (data bearing) hologram (without the alignment pattern), the signal light 5 (data beam) is P polarized, *such that* “the position control by the control circuit 70 based on detection of S polarization component 8 by 53s of light sensitive cells is not affected”. The examiner believes it to be clear that while the second hologram is recorded with a P-polarized data beam and an S-polarized reference beam, the alignment pattern is simultaneously read out as a portion of the S-polarized reference beam diffracted into the output arm of the data beam used to record the (second) hologram. That is, the data beam of the second hologram is common to recording of the second hologram and simultaneous detection of the alignment pattern during such recording. This position is further supported in

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considering paragraph [0053] of the reference. FUJI XEROX anticipate that their method will also be carried out in an apparatus that performs only recording of the holograms. Even in these cases however, "for the hologram reproduction for alignment to be included", there will be a detector 53s for alignment. It is the readout detector 53p that is to be omitted.

Thus, in operating the apparatus of FUJI XEROX, the recited method steps are inherently undertaken.

With regard to claims 37, *et seq.*, the offset component "characterizes" a difference between the (P) polarization of the first component of the source beam and the (S) polarization of the second component of the source beam, in that during recording of the second, polarization-modulated hologram, the offset beam contains as (S polarized light) reference light diffracted by the amplitude-type alignment pattern, and no contribution from the P-polarized data beam. If the offset component contains contributions other than from the intensity modulated alignment pattern, then, the first component of the source beam is not orthogonal to the second component of the source beam.

With regard to claims 6 and 38, the act of passing the source beam through splitter (24) may be regarded as "adjusting" the polarization, since light containing a single polarization is derived from light having a different polarization orientation.

With regard to claim 46, an output power unit and measurement inheres among the detector (53s) and control circuit 70 of FUJI XEROX, since the intensity of the diffracted alignment pattern must be detected before a determination respecting

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alignment can be made. Thus, FUJI XEROX monitor power within the specificity recited.

Allowable Subject Matter

Claims 54 – 58 are allowable over the prior art for the reasons previously indicated with respect to the subject matter of independent claims 54, 55, and 56. For the reasons previously indicated, claims 2 – 4, 7, 14, 36, 39 – 45, 47, and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 8 – 14, 50 – 53, and 59 – 61 are now allowable over the prior art.

The following is a statement of reasons for the further indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or to fairly suggest

the apparatus for recording a hologram, comprising a polarizing beam splitter for separating an offset component from an output arm of the data beam and a lens for focusing the offset component onto the detector, as now recited claims 8 and 50.

Response to Amendment

Applicant's amendment of claims 8 and 50 is sufficient in overcoming the previous rejection of claims 8, 12, 13, 50, 51, and 59 under 35 U.S.C. §102(a) as being anticipated by FUJI XEROX (JP 2000-268380 A). The recitation of a lens "for focusing

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the offset component onto the detector” has been construed as requiring the lens to be arranged such that it forms a focus at the detector. The lens of FUJI XEROX is clearly arranged to collimate the offset component. Nothing in the prior art would suggest modifying the arrangement of FUJI XEROX as now recited, since the images are stored as Fourier transform holograms.

Applicant's amendment of claims 1 and 37 is not sufficient to distinguish over the prior art, and the rejection of claims 1, 5, 6, 37, 38, 46, and 49 under §102(a) as being anticipated by FUJI XEROX (JP 2000-268380 A) stands as set forth above. Applicant remarks that “recording and measuring operations are not connected by a common data beam in FUJI XEROX.” However, as now further explained in the rejection, the examiner believes this to be in error. Turning to the discussion in paragraph [0047] of the reference (for example), the examiner believes it to be clear that while the second hologram is recorded with a P-polarized data beam and an S-polarized reference beam, the alignment pattern is simultaneously read out as a portion of the S-polarized reference beam diffracted into the output arm of the data beam used to record the (second) hologram. That is, the data beam of the second hologram is common to recording of the second hologram and simultaneous detection of the alignment pattern during such recording. As set forth in the rejection, this position is further supported in considering paragraph [0053] of the reference.

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Errata

In the Office action of June 22, 2004, in the reasons for indicating allowable subject matter atop Page 5 at lines 2 - 3, "as variously recited in claims 7,14, 39, 40, 52, and 52" should read "as variously recited in claims 7,14, 39, 40, 52, and 53".

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

In the Office action of June 22, 2004, the examiner listed U.S. Patent number 3,720,453 (Lee, et al) on form PTO-892, but did not discuss the reference. Lee, et al disclose a holographic recording apparatus (Fig. 3a) with a lens, a polarizing beam splitter, and a detector in the output arm of the data beam. The beam splitter and detector are only used during a read operation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for *all* communications.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

December 17, 2004